

SEQUENCE LISTING

SEQ ID NO:1

5'ACTCACTATAGGGGCTCGAGCGGCCCGCCCGGGCAGGTGGGGGCTCCGCGGGCCTGGA
GCACGGCCCGGTCTAATATGCCCCGAGCCGAGGCGCGATGAAGGAGAAGTCCAAGA
ATGCGGCCAAGACCAGGAGGGAGAAGGAAAATGGCGAGTTTTACGAGCTTGCCAAG
CTGCTCCCGCTGCCGTCCGCCATCACTTCGCAGCTGGACAAAGCGTCCATCATCCGC
CTCACCACGAGCTACCTGAAGATGCGCGCCGTCTTCCCCGAAGGTTTAGGAGACGCG
TGGGGACAGCCGAGCCGCGCCGGGGCCCCTGGACGGCGTCGCCAAGGAGCTGGGATC
GCACTTGCTGCAGACTTTGGATGGATTTGTTTTTGTGGTAGCATCTGATGCCAAAATC
ATGTATATATCCGAGACCGCTTCTGTCCATTTAGGCTTATCCCAGGTGGAGCTCACG
GGCAACAGTATTTATGAATACATCCATCCTTCTGACCACGATGAGATGACCGCTGTC
CTCACGGCCCCACCAGCCGCTGCACCACCACCTGCTCCAAGAGTATGAGATAGAGAG
GTCGTTCTTTCTTCGAATGAAATGTGTCTTGGCGAAAAGGAACGCGGGCCTGACCTG
CAGCGGATACAAGGTCATCCACTGCAGTGGCTACTTGAAGATCAGGCAGTATATGCT
GGACATGTCCCTGTACGACTCCTGCTACCAGATTGTGGGGGCTGGTGGCCGTGGGCC
AGTCGCTGCCACCCAGTGCCATCACCGAGATCAAGCTGTACAGTAACATGTTTCATGT
TCAGGGCCAGCCTTGACCTGAAGCTGATATTCCTGGATTCCAGGGTGACCGAGGTGA
CGGGTTACGAGCCGCGAGGACCTGATCGAGAAGACCCTATACCATCACGTGCACGGC
TGCGACGTGTTCCACCTCCGCTACGCACACCACCTCCTGTTGGTGAAGGGCCAGGT
ACCACCAAGTACTACCGGCTGCTGTCCAAGCGGGGCGGCTGGGTGTGGGTGCAGAG
CTACGCCACCGTGGTGCACAACAGCCGCTCGTCCCGGCCCCACTGCATCGTGAGTGT
CAATTATGTACTCACGGAGATTGAATACAAGGAACCTCAGCTGTCCCTGGAGCAGGT
GTCCACTGCCAAGTCCCAGGACTCCTGGAGGACCGCCTTGTCTACCTCACAAGAAAC
TAGGAAATTAGTGAAACCCAAAAATACCAAGATGAAGACAAAGCTGAGAACAAAC
CCTTACCCCCCACAGCAATACAGCTCGTTCCAAATGGACAAACTGGAATGCGGCCA
GCTCGGAAACTGGAGAGCCAGTCCCCCTGCAAGCGCTGCTGCTCCTCCAGAAGTGA
GCCCCACTCAGAAAGCAGTGACCTTCTGTACACGCCATCCTACAGCCTGCCCTTCTC
CTACCATTACGGACACTTCCCTCTGGACTCTCACGTCTTCAGCAGCAAAAAGCCAAT
GTTGCCGGCCAAGTTCGGGCAGCCCCAAGGATCCCCTTGTGAGGTGGCACGCTTTTT
CCTGAGCACACTGCCAGCCAGCGGTGAATGCCAGTGGCATTATGCCAACCCCCCTAGT
GCCTAGCAGCTCGTCTCCAGCTAAAAATCCTCCAGAGCCACCGGCGAACACTGCTAG
GCACAGCCTGGTGCCAAGCTACGAAGCGCCCCGCCGCCGCGTGGCGAGGTTTCGGCG
AGGACACCGCGCCCCCGAGCTTCCCGAGCTGCGGCCACTACCGCGAGGAGCCCCGCG
CTGGGCCCCGGCCAAAGCCGCCCGCCAGGCCGCCCGGGACGGGGCGCGGCTGGCGCT
GGCCCCGCGCGGCACCCGAGTGCTGCGCGCCCCCGACCCCCGAGGCCCGGGCGCGC
CGGCGCAGCTGCCCTTCGTGCTGCTCAACTACCACCGCGTGCTGGCCCCGGCGCGGAC
CGCTGGGGGGCGCCGCAACCCGCCGCTCCGGCCTGGCCTGCGCTCCCGGCGGGCCCC
GAGGCGGGGACCGGCGCGCTGCGGCTCCGGCACCCGAGCCCCGCGGCCACCTCCCC
GCCCGGCGCGCCCCCTGCCGCACTACCTGGGCGCCTCCGTTCATCATCACCAACGGGA
GGTGACCCGCTGGCCGCCCCGCGCCAGGAGCCTGGACCCGGCCTCCCGGGGCTGCGG
CGCCACCGAGCCCGGCAAATGCGCACGACCTACATTAATTTATGCAGAGACAGCTG
TTTGAATTGGACCCCGCCGCCGACTTGCGGATTTCCACCGCGGAGGCCCGCGCGCC
GGTGCCGAGGGCCGAGGAGCGCCCGGGTCCGGGCAGGTGACCGCCCGCCTCTGTCC
TGCGAGGGCCGCTGCGACCCAGTTGCTGGGGGCTTGGTTTCCTCACCTTGAAATCGG
GCTTCACGCGTCTTGCTTGTCCCCAACGTTCCACAACAGTCCCGCTGGGGGATTGA
AGCGGTTTCACTCCGCAAATATCCTCCACTTTCAGGAGGGGAAAACCCACCTACCAC
AGTCCGCTCTTCCAAGTGGACGGCAGACCTGGGAGGGGACGCCTGTGTACAGGCC
CTTTTAGATGCTTAGGTGAAGGCAGAAGTGATGATTGTAAGTCCCATGAATACACAA
CTCCACTGTCTTTAAAAGTCATTCAAGAGTCTCATTATTTTTGTTTTTATTTAACCTT
TCTTCAATACAAAAAGCCAACAAACCAAGACTAAGGGGGTGACCATGCAATTCCAT
TTTGTGTCTGTGAACATAGGTGTGCTTCCCAAATACATTAACAAGCTCTTACTTCCCC

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CTAACCCCTATGAACTCTTGATAACACCAAGAGTAGCACCTTCAGAATATATTGAAT
 AGGCATTAAATGCAAAAATATATATGTAGCCAGACAGTTTATGAGAATGACCCTGTC
 AAGCTTCATTATTACGTGGCAAAATCCCTCTGGCCCACACAGATCTGTAATTCATA
 GGCTCGTGTTTGCTACAAATAGTGCTAATAAAGTTAAATTGCACGTGCAATACGGAA
 CACTGTCAATGGACTGCACCTTGTGAAGGAAAAACATGCTTAAGGGGGTGTAAATGA
 AAATGATGTAGACATTTTAAGCATTTTCTACACAGCGAGAAAACCTTCGTAAGAACAT
 GTTACGTGTGCAACAGGTAAACAGAAAATCCTTTCATAAAGCACCAGCAGTGTTTAAA
 AAATGAGCTTCCATTAATTTTTACTTTTTATGGGTTTTGCTTAAAGATCTCAACATGG
 AAAAATCCTGTGCATGGCTCTGAACTGCACAATGCATTGAACCGCCGTCCTTCA
 ATTTTCTTCACACTATCAACACTGCAGCATTTTGCTGCTTTATCAAAAATGGTTTATTT
 TAGGAAACTTTTTCCACCTTTCTGAATGGAAAGAGGTTTTACAAAATGTTTTAAACTC
 ATCGTTCTAAAATCAAGTGCACCTACACCAACTGCTCTCAAAAATGTGAACTGACTTT
 TTTTTTTTTTTTTTTTGGCAACCCTGTGTCACTTAGTGAGGACCTGACACAATCCCTAC
 AGGGTGTCTGTCAAGTGGGCTCATGGTAAGAGTCACAATTTGCAAATTTAGGACCGT
 GGGTCATGCAGCGAAGGGGCTGGATGGTAGGAAGGGATGTGCCCGCCTCTCCACGC
 ACTCAGCTATACCTCATTACAGCTCCTTGTGAGTGTGTGCACAGGAAATAAGCCGA
 GGGTATTATTTTTTTATGTTTCATGAGTCTTGTAATTAACCGTGATTCTTGAAAGGTG
 TAGGTTTGATTACTAGGAGATACCACCGACATTTTTCAATAAAGTACTGCAAAATGC
 TTTTGTGTCTACCTTGTTATTAACCTTTGGGGCTGTATTTAGTAAAAATAAATCAAGG
 CTATCGGAGCAGTTCAATAACAAAGGTTACTGTTGAGAAAAAAGACCCTATCATAG
 ATTTACAA 3'

SEQ ID NO:2

5'ACTCACTATAGGGCTCGAGCGGCCGCCCCGGGCAGGTGGGGCTCCGCGGGCCTGGA
 GCACGGCCGGGTCTAATATGCCCGGAGCCGAGGCGCGATGAAGGAGAAGTCCAAGA
 ATGCGGCCAAGACCAGGAGGGAGAAGGAAAATGGCGAGTTTTACGAGCTTGCCAAG
 CTGCTCCCGCTGCCGTGGCCATCACTTCGCAGCTGGACAAAGCGTCCATCATCCGC
 CTCACCACGAGCTACCTGAAGATGCGCGCCGTCTTCCCCGAAGGTTTAGGAGACGCG
 TGGGGACAGCCGAGCCGCGCCGGGCCCTGGACGGCGTCGCCAAGGAGCTGGGATC
 GCACTTGCTGCAGACTTTGGATGGATTGTGTTTTGTGGTAGCATCTGATGGCAAAATC
 ATGTATATATCCGAGACCGCTTCTGTCCATTTAGGCTTATCCCAGGTGGAGCTCACG
 GGCAACAGTATTTATGAATACATCCATCCTTCTGACCACGATGAGATGACCGCTGTC
 CTCACGGCCCACCAGCCGCTGCACCACCACCTGCTCCAAGAGTATGAGATAGAGAG
 GTCGTTCTTTCTTCGAATGAAATGTGTCTTGCGGAAAAGGAACGCGGGCCTGACCTG
 CAGCGGATACAAGGTCATCCACTGCAGTGGCTACTTGAAGATCAGGCAGTATATGCT
 GGACATGTCCCTGTACGACTCCTGCTACCAGATTGTGGGGCTGGTGGCCGTGGGCCA
 GTCGCTGCCACCCAGTGCCATCACCGAGATCAAGCTGTACAGTAACATGTTTCATGTT
 CAGGGCCAGCCTTGACCTGAAGCTGATATTCCTGGATTCCAGGGTGACCGAGGTGAC
 GGGTTACGAGCCGCGAGGACCTGATCGAGAAGACCCTATACCATCACGTGCACGGCT
 GCGACGTGTTCCACCTCCGCTACGCACACCACCTCCTGTTGGTGAAGGGCCAGGTCA
 CCACCAAGTACTACCGGCTGCTGTCCAAGCGGGGCGGCTGGGTGTGGGTGCAGAGC
 TACGCCACCGTGGTGCACAACAGCCGCTCGTCCCCGGCCCCACTGCATCGTGAGTGTC
 AATTATGTACTACGGAGATTGAATACAAGGAACCTTCAGCTGTCCCTGGAGCAGGTG
 TCCACTGCCAAGTCCCAGGACTCCTGGAGGACCGCCTTGTCTACCTCACAAGAACT
 AGGAAATTAGTGAAACCCAAAAATACCAAGATGAAGACAAAGCTGAGAACAAACC
 CTTACCCCCCACAGCAATACAGCTCATTCCAAATGGACAAACTGGAATGCGGCCAG
 CTCGGAAACTGGAGAGCCAGTCCCCCTGCAAGCGCTGCTGCTCCTCCAGAACTGCAG
 CCCCCTCAGAAAGCAGTGACCTTCTGTACACGCCATCCTACAGCCTGCCCTTCTCC
 TACCATTATGGACACTTCCCTCTGGACTCTCACTTCTTCAGCAGCAAAAAGCCAATG
 TTGCCGGCCAAGTTCGGGCAGCCCCAAGGATCCCCTTGTGAGGTGGCACGCTTTTTC
 CTGAGCACAATGCCAGCCAGCGGTGAATGCCAGTGGCATTATGCCAACCCCTAGT

GCCTAGCAGCTCGTCTCCAGCTAAAAATCCTCCAGAGCCACCGGCGAACACTGCTAG
GCACAGCCTGGTGCCAAGCTACGAAGGTGGGTCAGGTCTGCTCGTGGGGAAGGTGG
GAGGACTGCGCACGGCCGGGAGCCGAAGCAGCCATGGCGGTGGGTGGCAGATGGAG
ACAGAACCCTCACGCTTTGGGCAAACCTTGCCCTCTTTCTGCTTCTAAGTAGGGGCTTGCTGTG
CTTTCTTGCTCTCAATGCAGGTGCTCCTCGAGAGTGAGAAATGGCAGTCTGCCTGCC
TCGGGGACACTAGTGACAGTATAAAGGGCAAAGGAAAACCGAGTATCTGGCCTTCA
CGTAAATCCTGGCCACATTCACCAACCAAAGGGGGACAGTGATTTTCAAAACCAGC
TCCCATGTGCTGAGAACACCCAGCTGCATTTCTTTTGCAAGATTCTTTTCCACTCCA
ACCAGAAGTGAATATTTGAGACAAACGGCCTATTGGCTATTTTCCCATGCCAGTTTT
GGAAGTGGGGAAAACCTATGGTGGAATTTGTGGGCTTGGGGACAGAAATGCCACTC
ACCAACCCAGGGCAAAGAACACAAACCCTCCAGGCCTCAGTTTCTTCACCTGTAAA
ATGGGGTGAAGCTGTGATGTGCCTACTCCCAAGGACACGACACACAGTAGGGACCT
GCCCTGTACATGCTAGTTCAACAGAAAGGAATGGCCTTTCACCTTCTCCTGGTGGCA
GGCAAGCAGATGTCCTCTGCGGAGATACCGCCAGCTCCCCAGGACGCAGACTGACT
CCTGTTTGCTCGCTGGACCAACCCAGGCAGAAAGGTGGAAGGTGGGAACAGAGGTT
TAGCTGCAGGACATGTATTCCCATTCACCCGAGACCTAACTGCCGCTCAGAGTGTAG
ACCGAGATGGTGCAGATGCCTGCAGTGCCATTAAAATGTGGGTGAAGGTGACATCA
GGATTATGTGCCCCAGGCCGGGCTCAGTGGCTCACACCTGTAATCCCAGCACTTTGG
GAGGCCAAGGTGGGCGGATCACCTGAGGTCAGGAGTTTTCGACAAGCCTGCCAACA
AGCTGAAACCCCATCTCCACTAAAAATACAAAAATTAGTTGGGCATGGTGGTGAGC
ACCTGTAATCCCAGCTACTCTGGAGGCTGAGATAGGAGGATCACTTGAACCCGGGA
GGTGGAGGTTGCAGTGAGCTAAGATCACATCACTGCACTCCAGCCTGGGTAACAGA
GTGAGACTGTCTCAAAAAAAAAAAAAAAAAA 3'

SEQ ID NO:3- SIM2 long-form Amino Acid Sequence

MKEKSKNAAKTRREKENGFEYELAKLLPLPSAITSQLDKASIIRLTTSYLKMRAVFPEGL
GDAWGQPSRAGPLDGVAKELGSHLLQTLDFVVFVASDGKIMYISETASVHLGLSQVEL
TGNSIYEYIHPSDHDDEMTAVLTAHQPLHHLLQEYEIERSFFLRMKCVLAKRNAGLTCSG
YKVIHCSGYLKIRQYMLDMSLYDSCYQIVGLVAVGQSLPPSAITEIKLYSNMFMFRASLD
LKLIFLDSRVTEVTGYEPQDLIEKTLYHHVHGCDVFHLRYAHHLLLKVGQVTTKYRLL
SKRGGWVWVQSYATVVHNSRSSRPHCIVSVNYVLTEIEYKELQLSLEQVSTAKSQDSW
RTALSTSQETRKLVPKNTKMKTKLRNTPYPPQYSSFQMDKLECGQLGNWRASPPAS
AAAPPELQPHSESSDLLYTPSYSLPFSYHYGHFPLDSHVFSKKPMLPAKFGQPQGSPEV
ARFFLSTLPASGECQWHYANPLVPSSSSPAKNPPEPPANTARHSLVPSYEAPAAAVRRFG
EDTAPPSFPCGHYREEPALGPAKAARQAARDGARLALARAPECCAPPTPEAPGAPAQ
LPFVLLNYHRVLARRGPLGGAAPAASGLACAPGGPEAATGALRLRHPSAATSPPGAPLP
HYLGASVIITNGR

SEQ ID NO:4- SIM2 short-form Amino Acid Sequence

MKEKSKNAAKTRREKENGFEYELAKLLPLPSAITSQLDKASIIRLTTSYLKMRAVFPEGLGDA
WGQPSRAGPLDGVAKELGSHLLQTLDFVVFVASDGKIMYISETASVHLGLSQVELTGNSIY
EYIHPSDHDDEMTAVLTAHQPLHHLLQEYEIERSFFLRMKCVLAKRNAGLTCSGYKVIHCSG
YLKIRQYMLDMSLYDSCYQIVGLVAVGQSLPPSAITEIKLYSNMFMFRASLDLKLIFLDSRV
EVTGYEPQDLIEKTLYHHVHGCDVFHLRYAHHLLLKVGQVTTKYRLLSKRGGWVWVQSY
ATVVHNSRSSRPHCIVSVNYVLTEIEYKELQLSLEQVSTAKSQDSWRTALSTSQETRKLVPK
NTKMKTKLRNTPYPPQYSSFQMDKLECGQLGNWRASPPASAAAPPELQPHSESSDLLYTPS
YSLPFSYHYGHFPLDSHVFSKKPMLPAKFGQPQGS
SPEVARFFLSTMPASGECQWHYANPLVPSSSSPAKNPPEPPANTARHSLVPSYEGGSGL
LVGKVGGLRTAGSRSSHGGGWQMETEPSRFGQTCPLSASK

SEQ ID NO:5- UniGene, Hs. # 146186

5'-GGAATATTTCGAAACCCCGAGCTTTTACAACATAAAGCGCATGGTGTGGCCGCGG
CGGGTAATGGCGCTCTGGGAGCCCTGCCAGGCGGCCTCTGCTCGCCCTCCTCCACT
TCCAGCTCCGAGCTGGGTGTGTTGCAAGTTTCATACTCCTACATATTATAAGTGACA
CTAATATCAGGGACAACCTAAGTGCTGGGGAACCTCAATGAAAACCTGGCTGGTAAA
GTCAACACCCCCAGACTTCTCTGTGCTACATTTCTTTAATTAATTCCGGAGTGGTGTG
TGGACGGGCGTCTTTGCAGTTATTATACACGTAAGTGAATTAGGCCATTTGAAGCTA
CGAAGTCATACCCAACATTTTCCATTAAGAATATTATTTTTTTAGCTACTGCTGGCAA
CTTTTAGAATTTAATTATGATAATTTTCCTCTTTTCCTCATTATCCCAGATATGGCTGG
TTGTGAGATACTTTTTCACTANATGTGTCTTTTAAATGATTTTGAATTAAGCAAGTA
TGCCAAATGCGCCAAGACATTTATACTNTAGAAATTGCTGTATAGTATATAT -3'

SEQ ID NO: 6- 1001 bp extended contig

5' -GGAATATTTCGAAACCCCGAGCTTTTACAACATAAAGCGCATGGTGTGGCCGCGG
CGGGTAATGGCGCTCTGGGAGCCCTGCCAGGCGGCCTCTGCTCGCCCTCCTCCACT
TCCAGCTCCGAGCTGGGTGTGTTGCAAGTTTCATACTCCTACATATTATAAGTGACA
CTAATATCAGGGACAACCTAAGTGCTGGGGAACCTCAATGAAAACCTGGCTGGTAAA
GTCAACACCCCCAGACTTCTCTGTGCTACATTTCTTTAATTAATTCCGGAGTGGTGTG
TGGACGGGCGTCTTTGCAGTTATTATACACGTAAGTGAATTAGGCCATTTGAAGCTA
CGAAGTCATACCCAACATTTTCCATTAAGAATATTATTTTTTTAGCTACTGCTGGCAA
CTTTTAGAATTTAATTATGATAATTTTCCTCTTTTCCTCATTATCCCAGATATGGCTGG
TTGTGAGATACTTTTTCACTAAATGTGTCTTTTAAATGATTTTGAATTAAGCAAGTA
TGCCAAATGCGCCAAGACATTTATACTTTAGAAATTGCTGTATAGTATATATTTTTG
GAACACCACAGGTTTAGTTGGGAAAATATTTTGCAGCTGAGTTAGAACTTGAAAGT
TAGGCTTATAATCAAGATGCTGATTTTCAACCTTAGCATCGGGGAAGGTAATGATAG
TTTAGTTGGCAAAGACTTTTTGCAGCAAACCTGTATTTGAGACAGCAGAATCCAAGGA
TATCTTTCAAGATTCACCTTATACTACATTCTTTTTAGCCCCCTCTCTAGGGGTGGAGG
GGGTGGCTTAGAAAAACCAAAGGTAATCTGGTTTCAATTACATGCTGTAAAAATAG
AATTTGTGGCCAGAAATTAATTTGGAATATTTTTTATGGGGGCAACATTGTGGGTTG
TATGAGTCTTTCACCAACTTTATTGCTTTTCTTTGGTTCTGGATCTAAAATATGAATG
AGTAAATAAAATACAGTTTCCTTTTTCAA -3'

SEQ ID NO:7

5' TGGAGGACCGCCTTGTCTACCT 3'

SEQ ID NO: 8

5' CCGGTGGCTCTGGAGGATTT 3'

SEQ ID NO:9

5' ACCTTCTGTACACGCCATCC 3'

09922660-080601

SEQ ID NO:10 (472 bp amplified product is underlined)

5'TGGAGGACCGCCTTGTCTACCTCACAAGAACTAGGAAATTAGTGAAACCCAAAA
ATACCAAGATGAAGACAAAGCTGAGAACAAACCTTACCCCCACAGCAATACAGC
TCGTTCCAAATGGACAACTGGAATGCGGCCAGCTCGGAACTGGAGAGCCAGTCC
CCCTGCAAGCGCTGCTGCTCCTCCAGAACTGCAGCCCCACTCAGAAAGCAGTGACCT
TCTGTACACGCCATCCTACAGCCTGCCCTTCTCCTACCATTACGGACACTTCCCTCTG
GACTCTCACGTCTTCAGCAGCAAAAAGCCAATGTTGCCGGCCAAGTTCGGGCAGCCC
CAAGGATCCCCTTGTGAGGTGGCACGCTTTTTCCTGAGCACACTGCCAGCCAGCGGT
GAATGCCAGTGGCATTATGCCAACCCCTAGTGCCTAGCAGCTCGTCTCCAGCTAAA
AATCCTCCAGAGCCACCGG 3'

SEQ ID:11

5' ATT CTT GGA CTT CTC CTT CAT CGC 3'

SEQ ID:12

5' GAG AGC AAG AAA GCA CAG CAA GCC 3'

SEQ ID:13

5' CCG AAC GAC ACG AAA GAA CGA GAG 3'

SEQ ID NO:14: Peptide used to raise polyclonal antibody

5' SHGGGWQMETEPSRF 3'

SEQ ID NO:15: Sense RT- PCR primers for SIM2 short-form

5' TGG AGG ACC GCC TTG TCT ACC T 3'

SEQ ID NO: 16: Antisense RT-PCR primers for SIM2 short-form

5' GCC CAA AGC GTG AGG GTT CTG TCT 3'

092364-080601